~~Designation:B 668–99~~

~~An American National Standard~~ Designation: B 668 – 00

# Standard Specification for ~~UNSN08028Seamless Tubes~~UNS N08028 Seamless Pipe and Tube[1]

This standard is issued under the fixed designation B 668; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This specification covers UNS N08028 seamless cold-finished ~~tubes~~or hot finished pipe and tube intended for general corrosive service. The general requirements are covered in Specification B 829B 829.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

## 2. Referenced Documents

2.1 *ASTM Standards:*

B 829 Specification for General Requirements for Nickel and Nickel Alloy Seamless Pipe and Tube[2]

## 3. General Requirement

3.1 Material furnished under this specification shall conform to the applicable requirements of Specification B 829B 829 unless otherwise provided herein.

## 4. Ordering Information

4.1 Orders for material under this specification shall include the following information:

4.1.1 Alloy name or UNS number,

4.1.2 ASTM designation and year of issue,

4.1.3 *Dimensions*—~~Outside diameter, minimum or average wall thickness (in inches or millimetres, not gage number), and length (specific or random),~~

4.1.3.1 Outside diameter, minimum or average wall thickness (in inches or millimetres, not gage number), and length,

4.1.3.2 Standard pipe size, schedule and length,

4.1.4 Quantity (feet or metres, or number of pieces),

4.1.5 Optional requirements,

4.1.6 *Certification*— State if certification is required,

4.1.7 *Samples for Product (Check) Analysis*—State whether samples for product (check) analysis should be furnished, and

4.1.8 *Purchaser Inspection*—If the purchaser wishes to witness tests or inspection of material at the place of manufacture, the purchase order must so state, indicating which tests or inspections are to be witnessed.



## 5. Materials and Manufacture

~~5.1Tubes shall be made by the seamless process and shall be cold finished.~~

~~5.2Tubes shall be furnished in the solution-annealed condition.~~

5.1 Pipe and tube shall be furnished in the solution-annealed condition.

NOTE 1—The recommended heat treatment shall consist of heating the material to a temperature of 1975 to 2100°F (1080 to 1150°C) with subsequent quenching in water or rapidly cooling by other means.

~~5.3The~~5.2 The scale shall be removed by suitable means. When bright annealed, scale removal operations are not necessary.

## 6. Chemical Composition

6.1 The material shall conform to the requirement prescribed in Table 1.

---

[1] This specification is under the jurisdiction of ASTM Committee ~~B-2~~ B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.07 on Refined Nickel and Cobalt and Their Alloys.

Current edition approved May 10, ~~1999.~~2000. Published ~~July 1999.~~June 2000. Originally published as B 668 – 80. Last previous edition B 668 – 9~~7~~9.

[2] *Annual Book of ASTM Standards*, Vol 02.04.

6.1.1 A chemical analysis shall be made on each lot of material as described in Specification B 829B 829.

6.2 If a product (check) analysis is performed by the purchaser, the material shall conform to Table 1 subject to the product (check) analysis variations prescribed in Specification B 829B 829.

## 7. Mechanical Properties and Other Requirements

7.1 The material shall conform to the mechanical properties prescribed in Table 2. One test is required for each lot, as defined in Specification B 829B 829.

7.1.1 One tension test shall be made on each lot of ~~tubes.~~ pipe or tube.

7.2 *Flaring Test*— One flaring test shall be made on a specimen from one end of one pipe or tube from each lot of finished tubes.

**TABLE 1 Chemical Requirements**

| Element | Composition, % |
|---|---|
| Carbon, max | 0.030 |
| Silicon, max | 1.0 |
| Manganese, max | 2.50 |
| Phosphorus, max | 0.030 |
| Sulfur, max | 0.030 |
| Chromium | 26.0–28.0 |
| Nickel | 30.0–34.0 |
| Molybdenum | 3.0–4.0 |
| Copper | 0.6–1.4 |
| Iron | remainder[A] |

[A] Determined arithmetically by difference.



**TABLE 2 Tensile Requirements**

| Tensile Strength, min, ksi (MPa) | Yield Strength, 0.2 % Offset, min, ksi (MPa) | Elongation in 2 in. (50.8 mm) or 4*D*, min, % |
|---|---|---|
| 73 (500) | 31 (214) | 40 |